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ADOPTION OF THE REPORT OF THE COMMITTEE ON ITS TWELFTH SESSION

Draft report

Addendum

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Chaper II

ENERGY RESOURCES (Item 3)

1. The Committee considered item 3 of its agenda at its 1st and 2nd meetings on 25 and 26 March 1991. It had before it the following documents:

(a) Report of the Secretary-General on trends and salient issues in energy resources (E/C.7/1991/9);

(b) Report of the Secretary-General on energy-saving strategies and measures to improve the efficient utilization of electric power systems (E/C.7/1991/12);

(c) Report of the Secretary-General on technical cooperation programmes in energy (E/C.7/1991/13).

2. The representative of the Department of Technical Cooperation for Development noted the critical importance of energy efficiency measures, especially as regards electricity. In developing countries, physical infrastructure was deteriorating rapidly, mainly due to systematic lack of plant maintenance, as indicated in document E/C.7/1991/12. Systematic maintenance costs should be regarded as an

investment to protect basic equipment so as to guarantee high availability and efficiency and extend the economic life of a plant. While the rehabilitation of a power plant might be technically difficult, case studies showed that the cost per kilowatt of rehabilitated capacity could be one-fourth the cost for the same capacity in a completely new plant and that the implementation time was also significantly shorter.

3. Losses in the transmission and distribution of electric power were often unacceptably high in many developing countries, sometimes accounting for up to one fourth of power generated. While technical losses could be reduced by lowering the resistance and the reactive power flow and increasing the system voltage, cutting non-technical losses raised administrative problems since they often involved accurate computerized billing, damaged meters or the inability of poorer sectors of the population to pay for electricity use.

4. Regional power system interconnections were especially attractive to developing countries since they resulted in lower generation costs, lower reserve capacities and increased supply security. That was especially beneficial when smaller national grids were interconnected. Power system planning, which in general was highly computerized, and training should receive particular attention. Document E/C.7/1991/13 provided an overview of technical cooperation project activities in energy. In 1990, the Department executed 106 energy projects in 40 developing countries with budgets of around $22 million in a wide variety of sub-sectoral areas including energy policy and planning, power plant rehabilitation and modernization, greater energy end-use efficiency and conservation in industry, transport, residential, commercial and rural sectors, modernization of coal mines, and development of new and renewable sources of energy.

5. The report summarized the Department's active programme of international meetings, research, publications and software development in support of technical cooperation activities in energy.

6. The representative of the Department of International Economic and Social Affairs noted that document E/C.7/1991/9 offered a broad and long-range perspective on energy demand and suppply and to the policy issues to which they gave rise.

7. The analysis was conducted at the global level, but the energy needs, resources, and prospects of developing countries were given particular attention. Its time horizon extended through approximately the first two decades of the next century. The link between energy and the environment was treated in the report at some length.

8. The composition of gross domestic output would be the most important variable influencing energy intensity, for most countries. Trends in product mix would probably work towards a falling energy intensity of production in the developed country group and a rising intensity in the developing countries. Technological progress would be the second principal factor influencing future energy intensity. Those intangibles would eventually be embodied in more energy-efficient durable goods, if they were to reduce the rate at which energy must be utilized to perform particular tasks. Technological innovation would ultimately become an investment problem.

9. In considering energy intensity and economic efficiency, movement towards higher-energy intensity in a society is not necessarily inconsistent with a movement towards a more economically efficient employment of energy.

10. On the supply side of the energy picture, mankind did not face any absolute physical shortage of energy; it did, however, confront the challenge of transforming an enormous theoretical potential into adequate practical potential. The research underlying the report investigated a large number of specific fuels and energy forms. Most important, fossil fuels and those fuels and renewable energy flows in which the Economic and Social Council expressed a particularly interest in its resolution 1989/6 were accorded separate treatment In each case, the outlook for the energy source's technological maturation and costs of production and the constraints peculiar to it were discussed. Investigation of those factors provided a basis for an appreciation of the practical potential of the energy source and the grounds for a realistic assessment of the prospects for that potential being realized during the next few decades.

11. On the role of public policy, particular attention was paid to the relationship between energy and environmental policy. Achievement of economic efficiency in the production and use of energy was posited as the basic - though not necessarily exclusive - goal of public policy towards energy, and competitive markets were seen as the most frequently employed institutional device to attain that goal. However, in some situations competitive markets did not, even in principle, lead to economically efficient production or use of energy. One example was a situation in which environmental damage occurred incidentally to the production of energy. The aim of policy in such situations was to induce the individual energy enterprise to produce at the socially optimal rate, either through internalization of the environmental costs to the enterprise by taxation or thorugh direct governmental mandates. Thus, environmental policy, at least in its relationship to energy, could be viewed as simply energy policy in which the benefits and costs of energy production and use were seen in a sufficiently broad perspective.

12. With regard to the expansion of energy production capacity in developing countries, the main obstacle to the transformation of energy resources into tangible production capacity was the problem of financing the required investment. Among measures to alleviate it, the most important was the expansion of the cash flows available to individual energy enterprises - both public and private. Steps to improve the efficiency of capital markets in developing countries could also assist in the financing of energy investment as well as aiding across the whole spectrum of developmental finance. Foreign equity participation could play an important role in the same process. International and national development institutions could provide a vital catalytic function in the early exploratory stages of resource exploitation and assist in financing the later development phase.

13. Most delegations welcomed the reports of the Secretary-General and emphasized the importance of energy to the process of economic growth and development in their own countries; several gave brief surveys of the energy-related challenges and opportunities in their countries. Several delegations recalled that energy was chosen for special emphasis at the twelfth session of the Committee in order to

underscore the crucial role it plays in the growth and development of developing countries. Developing countries should anticipate significant growth in energy demand, and technical as well as financial assistance would be needed to meet and restructure future energy consumption.

14. Several representatives raised issues concerning environment and development. While environmental considerations in energy development were increasing in importance, representatives cited the conflict that sometimes arose between environmental goals and development priorities. In addition, present mechanisms were inadequate to address both energy-related environmental degradation and disasters. New modalities would be needed to address those issues.

15. Most delegations stressed the need to utilize energy more efficiently in the future, so as to maximize its contribution to economic growth and development. Several representatives pointed out that the continued use of older and less energy-efficient technologies, particularly in industry, increased costs and limited economic expansion. Those delegations emphasized the need for transfer to developing countries of more energy-efficient technologies and for augmentation of the funds supporting such transfer.

16. Considerable attention and commentary were directed at efficiency and conservation in the electric power sector, with emphasis given to problems in generation, transmission and distribution. Representatives encouraged the establishment of pilot programmes promoting energy efficiency, including rehabilitation, life extension and modernization of power plants. Inadequate maintenance of outdated equipment was noted as leading to high operating costs as well as reduced availability and reliability. Lack of adequate electricity in rural areas was also mentioned as increasing environmental stress through fuelwood dependence. Finally, representatives pointed out that regional power interconnections would improve availability and reliability at lower cost.

17. The question of increasing energy production capacity in developing countries was also addressed by several delegations. With respect to new and renewable sources of energy, one delegation considered that development of small-scall hydropower provided perhaps the most viable prospect. Another emphasized the potential role of natural gas, in view of the magnitude of the reserves and the relatively benign environmental effects of that fuel. Coal-bed methane recovery was cited as a proven technology in developed countries with potential commercial and environmental benefits. Several delegations noted that inadequate exploration and development often resulted in excessive energy imports and that scarcity of financial resources had constrained energy resource development. They recommended that the United Nations system and door countries should assist developing countries, both technically and financially, to exploit and diversify their energy resource base. They stressed the importance of additional funding to assist developing countries to adequately meet environmental impacts arising from energy production, transformation and utilization.

18. One delegation stressed the importance of promoting cooperation betwen energy-producing and energy-consuming countries since net benefits could be derived by both sides. Such international cooperation could ensure long-term stability. In particular, price stability demanded an orderly expansion of production capacity.

19. Several delegations expressed appreciation for United Nations technical cooperation programmes, and recommended that those programmes be fully supported with the technical and financial resources necessary for them to respond to the needs of developing countries. Most saw creation of self-sustaining and lasting capacities in recipient developing countries as the basic approach to technical cooperation. The training of technicians, managers and planners, the establishment of regional energy information centres for technical exchange, and provision of technical advisory services were emphasized by one delegate as specific areas of concentration. Another cited training of national staff in both technical and policy areas as critically important, both at the national and regional levels. One representative called attention to the importance of information systems for energy planning and policy analysis, and recommended that the United Nations enhance its technical cooperation programmes in this area.

20. Statements were made by representatives of the Econonic Commission for Europe, the Economic and Social Commission for Asia and the Pacific, the International Atomic Eenergy Agency, and the United Nations International Research and Training Institute for the Advancement of Women, outlining the activities of their organizations in the field of energy.